Game Developments
[Simulation and Convergence Scenarios]
[Note About the Multiverse]
(Version -1)

By

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August 15, 2026

Abstract

There are tools to fastly simulate the Universe in Diverse Scenarios : among those tools, are mainly the Game Development tools. We will introduce few notes about them.

0.1 Introduction

There is an opportunity to simulate the Universe from Game Developments: The creation of Multiple Agent-based Scenarios.

0.2 The Nash-Equilibrum Theorem of Game Scenarios

0.2.1 Definition

Mean field game (MFG) theory studies strategic decision-making in large populations of competing, small agents. Instead of tracking every single interaction, it assumes individuals react to the average statistical state—the "mean field"—of the entire crowd. This framework simplifies complex multi-agent dynamics into manageable mathematical models.
[here][here][here][here] [here] [here][here][here][here-1][here][here]

As examples, ***Financial Markets*** are ***Mean field Games***: Read [here] [here][here]

0.2.2 Key Mathematical Components

1. ***Hamilton-Jacobi-Bellman (HJB) Equation***: Solves backward in time to determine the optimal strategy for a single representative player within a given environment. [here]
2. ***Fokker-Planck-Kolmogorov (FPK) Equation***: Evolves forward in time to track how the distribution density of the population shifts based on those individual strategies. [here]
3. ***Nash Equilibrium***: Represents a stable state where no single agent benefits by changing their strategy given the population's overall behavior.

0.2.3 The Theorem of Game Scenarios Convergence to a Nash-Equilibrum

The convergence of game scenarios via finite element methods maps continuous strategic interactions—such as ***Mean Field Games (MFGs)*** with ***infinite players—onto discrete spatial and temporal meshes***. As the mesh size (h) approaches zero, numerical solutions for value and density functions converge to the true Nash equilibrium. [Google Thread][]

Available Resources : [here][here]

0.2.4 Mean Field Game Discretization

0.2.5 *Error Bounds and Norms*

1. H^1-Norm Convergence: Measures the error rate of the value function (the player's optimal strategy/cost-to-go), typically scaling linearly with mesh refinement (O(h) for linear elements)
2. L^2-Norm Convergence: Measures the error rate of the population density distribution, often achieving higher-order convergence via duality arguments like the Aubin–Nitsche trick [here]

0.3 The Theorem of Multiverse Simulation

Theorem of Multiverse Simulation generally combines Nick Bostrom's simulation argument with concepts from the multiverse. It suggests that if any advanced civilization can simulate conscious universes, they would likely create many of them. This implies that a vast multiverse of computed realities could exist, making it statistically probable that we live in a simulation rather than base reality. [here] [here] [here] [archive.org]

0.3.1 Some Properties

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1. ***Bolstrom's lemma***: Suggests advanced societies reach a post-human stage capable of running ancestor simulations, meaning simulated realities vastly outnumber physical ones. [here][here][here]
2. ***The Universe Stay a REAL Universe***: Recent studies argue that physical reality contains uncomputable, non-algorithmic truths that step-by-step computer code cannot replicate, suggesting the universe must be physically real. [here][here][here]

0.4 Game Institutions

There is a tremendous list of Game Institutions, read [here], [Robopon]; They are listed on many Game Design Websies [here][here][here][here]. We have selected few of them for a short illustration :

1. LogicSimplified,
2. BitStudio-Warsaw, here, [https://11bitstudios.com/],
3. MobyGames,
4. Nexon,
5. Gamedev.net [support@gamedev.net],
6. Stream DB developpers,
7. American Game Companies,
8. Game DevMap [contact@gamedevmap.com],
9. Game Database [https://www.gamesdatabase.org/developers],
10. We can also quote Counter Strike: we have played this game on a Computer brought by one of our Brother, [Rodrigue Ulrich Bidossessi Alahassa] from the Royal Military College of Bruxelles;

Figure 1: This is an example of simulated car game race [here]

0.5 Extended Contributors

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3. certification@qt.io,
4. partners@jolla.com, careers@jolla.com, etc.
5. Grocery Store, IGA Marché Verreault et Normandeau, here.

0.6 Journals of Interest

We may target : The Journal of Holography and Speckle, Journal of Applied Mathematics and Physics, Journal of Holography Applications and Physics, etc.

Other References : [LL07], [Car10], [CP21], [NC13], [Car20], [LLLL16], [HJN19], etc.

0.7 Thank you for your attention!

We hope you find This introductory useful, and do take a look at our Preprint on the Universe as a Program for more tutorials and user guides! Please also let us know if you have any feedback using the Linkedin Link here.— more works is available here . Great Thanks! (We are also writing a book on Statistics: here or here, Another One of Geometry and Differential Equations, here, all are coming. Please Check other zenodo reports). We will never forget Professor Gabriel Avossevou, Wilfrid Gangbo, Madame Toudonou, Professor of Geography and Land History – Ecole Normale Superieure of Porto-Novo, College Application, Professor Ahandagbe of Biology – Ecole Normale Superieure of Porto-Novo, College Application, Professor Atindogbe Cyriaque – IMSP, Professor Guy Degla, Professeur Jean Chabi Orou (Ecole Normale Superieure of Natitingou), Professeur Raphael Kelani (rkelani@gmail.com – Ecole Normale Superieure of Natitingou, read here), Recteur Akpona Simon of Parakou University , Professor Bouraima of Philosophy – from Ecole Normale Superieure of Porto-Novo, College Application, Professeur Chabi of Lycée Militaire des Jeunes filles de Natitingou, Rodolphe – kinesiologist (allied with our Parents Koovi & Patricia), etc. We keep some records of some classmates Facebook profiles on this link here (Jean-Marie Yalinkpon, Gaétan Kinifo, Kpéhoundé Igor, Olivier Tokpanou, Casimir Raymond Teffo, Ephraim Medegan Flaga, Casimir Takpiti, Bebada Rodrigue, Aurlus Sogbossi, Théophile Agbedjiko, Alain Togbenon, Thibault Houngue, Soliou Gbadamassi, Marius Midomide, Samuel Gbeya, William Ahossi, Akim Yorede, Firmin Zagbo, Henry Abadji, etc.). Boris Kougnimon – from Ecole Normale Superieure of Porto-Novo, College Application. The coming list are for some classmates from [ENSAE Dakar]: Souleymane Bognini, Celestin Semevo, Kayode Romaric, Zacharya Souli, Ulrich Faycal Sawadogo, Abdou Haki Maoude, Aliou Mballo Senzala, Jean-Claude Kabore, Joel Kazoule, Khadim Dia, Kokou Abah, Yaya Diallo, Ali Yedan, Hospice Dossou-Yovo, Nixon Koudakpo Kodjo, etc. We do remember some LDS Church relations as Well: Derlin Murray Pierre, Raymond Lallemant, etc. In Ecole Normale Superieure of Porto-Novo, College Application, we can remember Sinsin Corine Laurenda, here-15, here-16, Roseline Olory, Kiki-Sagbe Aina Mirange, Gbènahin Ninon Raïssa AMOUSSOU [read here], Rixte Lantonkpode, Iris NgonKen Caline, Christelle Amoussou [Her facebook Profile was Thaila Amoussou, here, or here], Akpata Abioro Dimitri (lorddisick63@gmail.com), Rhode Ahlonsou (rhode.ahlonsou@gmail.com), Djoffon Morel (djoffonmorel@yahoo.com) [here-17-3], read here also, Khamil Osseni, Yessoufou Nourou Dine, Camille Abattan, Hildever Ahlonsou, etc.

Other General Quotes and Citations are here: Lucien Sagbo [ENSAE Dakar], Alex Spiridigliozzi [Hec Montreal], Carlos Akakpovi [ENSAE Dakar], Kayodé Romaric Agnomi [ENSAE Dakar], Alexandre Judicael [Ecole Normale Superieure de Natitingou], Alexandre Amoussou-folly [Ecole Normale Superieure de Natitingou], Zinsou Max Debaly [ENSAE Dakar].

More photos are available here, and here, for: Aurlus Sogbossi [Ecole Normale Superieure de Natitingou], Davo Appolinaire [Ecole Normale Superieure de Natitingou], Narcisse Houssa-Gansi [Ecole Normale Superieure de Natitingou], Djabarou Issotina [ENSAE Dakar], Zacharia Souli [ENSAE Dakar], Cheick Diouf [ENSAE Dakar], Armand Coulibaly [ENSAE Dakar], Emmanuel Tago [ENSAE Dakar], Arnaud Lion [Hec Montreal], Lawson–Joel [Colocataire dans la Ville de Porto-Novo], Yves-Codjo [Colocataire dans la Ville de Porto-Novo], Komlan Alain Zogbe [Ecole Normale Superieure de Natitingou], Moudachirou Oumarou (he is here in Canada)[ENSAE Dakar], Akim Korede Oyere[Ecole Normale Superieure de Natitingou], Nourou Deen Abdou[Ecole Normale Superieure de Natitingou], Yaya Diallo (he is here in Canada)[ENSAE Dakar], Fadel Boukari [Ecole Normale Superieure de Natitingou], Fadel Zime [Ecole Normale Superieure de Natitingou], Pomanlegni Fiacre, Ferdinand Fatchehoun [Ecole Normale Superieure de Natitingou, he went to Ecole Normale Superieure de Porto-Novo too], Romeo Dah Lokonon [Ecole Normale Superieure de Porto-Novo], Gerardo Maroya [Ecole Normale Superieure de Porto-Novo], Alexandre Patoum Counde[Ecole Normale Superieure de Natitingou], Jack Ligane Sène[ENSAE Dakar], Khadim Dia[ENSAE Dakar], Lizette Escobar [LDS Church], Patrick Agbo[Ecole Normale Superieure de Natitingou], Elder Patrick Lauder[LDS Church], Edrice Gresseau [Restauration Jamacaine - Canada], Christelle Hounkonnou, Stam Sossou Ahinon[Ecole Normale Superieure de Natitingou], Omer Michihoun[Ecole Normale Superieure de Natitingou], Beaudelaire Gnavo[Ecole Normale Superieure de Natitingou], Jhonel Louis Jean[LDS Church], Jonathan David[LDS Church], Ridouanala Massaoudou [Polytechnique Montreal], Samson Kagmatche[Doctor, Professor & Safety Agent of Zum Residences Montreal], Johnny Shakamay[LDS Church], Anders Eklund[LDS Church], Solenn Benini [Zum Residences, University of Montreal], Rodin Eboue, Mamady Doumbouya [University of Montreal], Mahamadou Tankari[ENSAE DAKAR IFPRI], Arsel Loris Gbossa[Ecole Normale Superieure de Natitingou], Enock Mehinto[Ecole Normale Superieure de Natitingou], Emmanuel Dabre[University of Montreal], Felix Houssounou[Ecole Normale Superieure de Natitingou], Sayido Medard[Ecole Normale Superieure de Natitingou], Modou Faye[ENSAE Dakar], Fregus Ledeji[Ecole Normale Superieure de Natitingou], Moussa Diallo[ENSAE Dakar], Jean-Jacques Birba[ENSAE Dakar], Soliou Gbadamassi[Ecole Normale Superieure de Natitingou], Diabel Diop[ENSAE Dakar], Ibrahima Gaye[ENSAE Dakar], Corinne Ehou[Lycee Militaire des Jeunes filles de Natitingou], Gaetan Bassinga[ENSAE Dakar], Mohamed Gueye[ENSAE Dakar], Dudu Cisse[ENSAE Dakar], Jean Noel Diouf[ENSAE Dakar], Professor Karim Cisse[ENSAE Dakar], etc.

Remembering our Primary (High) School, College Les JAMBETTES of Porto-Novo (in Benin, here-13-1, here-13-2, here-13-3), we can add more classmates names:

- Nazaire, Fadel, Michael Wadagni, Bonheur Sokenou, Esperant Abokou, Boko Ulrich, Mechak [we have met Only in Summer School], Chadrak [we have Only in Summer School], (Mechak & Chadrak are twins from the same mother), Iskine, Canine Olafa (a girl), Gbènahin Ninon Raïssa AMOUSSOU, Ludovik Afanou [a girl], (**Ludovik Afanou and Boko Ulrich came to Senegal, we have met and have visited each other**), Loick Tokpessi (he is currently in Canada, here), etc. Sometimes, {Ludovik Afanou} was also called kindly {Ludoruth Afanou}.
- The Mother of Boko Ulrich was once in the past the Director of College Les JAMBETTES of Porto-Novo. We will give more information about the different Directors we have met in those times by the past.
- Other Closed families can be quoted, here-17-1, or here-17-2: Koumagnon, Boko, Radji (we have met with Namaou Radji in Senegal, here), Corneille Onidogni, Hounto Ronel, Hounto Inès, Bamigboche, Monsieur Sourou Barthélémy DANSOU de la DESG[Director of Lycee Militaire des Jeunes filles de Natitingou][close to our family][here], Lawani family. We sent our Greetings Notes to Silifatou Bouari, here. Of course, we have memories of Agbomenou families, Romain Agbomenou, Francois Xavier Agbomenou, Judith Agbomenou, Firmine Agbomenou, etc.
- We truly regret the situation of many of our families uncles and grandfathers/grandmothers, have passed, we still do not beleive if this is true or not!, `https://fr.wikipedia.org/wiki/Damien_Zinsou_Alahassa` (for example). We need to get in touch with them, Yannick Alahassa, (`https://www.facebook.com/yannfaith`), Arielle Alahassa (`https://www.facebook.com/arielle.alahassa`), Fifame Alahassa (`https://www.facebook.com/bibiane.debamako.9`), Hillary Alahassa (`https://www.facebook.com/hillarydoheto/about`), Cedric Alahassa, etc.
- Two Important incidents happened when we were kids: Gwladys Enagnon Alahassa had an incident with someone on the road driving a bycicle [we were playing on a sable of construction, figure 2, we were present during the event], and they drive her in Hospital Louis Pasteur or [Hopital El Fateh] [We can verify later]. We were living near Les Jambettes College. Personnaly, I had a hard experience when we were kids when taking a bath, I broke my skull nuke, and father Hounto, our neighbor, drive me in my Mother Hospital. Ouando Clinic Hospital.

Figure 2: Construction Sable

0.8 Contributors & Authorship

We are inspired by the Washington Program of Art & Study, `https://artsci.washington.edu/`, we are currently applying, read here.

Of course, We would like to get in touch with the Art & Study Programs Officers in Washington (Kristin Weinman, kweinman@uw.edu, Stephanie Kornfield, kornfs@uw.edu, Chista Countryman, ccount3@uw.edu, Tiffany Calverley, calvet@uw.edu, Lindsay Bailey-Weaver, ljbailey@uw.edu, Avanna Griffith, avannag@uw.edu, Michael Lee, mml84@uw.edu, Benny shell, lbshell@uw.edu, Kabrina Wright, kwright8@uw.edu, Lauren Zalewski, lzalew@uw.edu, Liz exell, lexell@uw.edu, Lori White, lbwhite9@uw.edu, Brynn Svenningsen, bsvenn@uw.edu, Josh Francis, joshsf@uw.edu, Lauren Zondag, zondagld@uw.edu, Annie Chan, ajadec@uw.edu, Richard Stegeman, rws85@uw.edu, Jessica Castillo, jessicle@uw.edu, Juan Rodriguez, juanjpg@uw.edu, Elle Yamaki, ellepl@uw.edu, Ivy-Mason Sarah, ivym@uw.edu, Debbie Olson, dsolson@uw.edu, Andy Huang, akch@uw.edu, Susan Miller, susanh82@uw.edu, Anna Sycz, asycz@uw.edu, Keana Valentin, kevalent@uw.edu, Liz Copland, enc5@uw.edu, Kiera Dempsey, kdempsey@uw.edu, Maile So, mailes7@uw.edu, Emily Uematsu, emilyu2@uw.edu).

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An extended list of Contributors is available here. We would like to say our Hello & Thanks to Atlantic International University for Their Acceptance letter in the Blockchain Technology Program (you can reach Sandra Garcia-Fierro [sandra@aiu.edu] for support, here). For those who want to work with us, please visit this link: here (you can write to: nonvikan.1991.1.augustt@mailfence.c as well). We have thankful thoughts to R. Kelly, Danielle Smith, Doug Ford, Burkina Faso Universities, Victor Sadovnichiy, Michael Jordan, Amanda Bynes, Taylor Swift, Anna Hathaway, Kimberly Loaiza, Valkyrae, Chiara Ferragni, Justin Trudeau, Justin Beiber, Selena Gomez, Angelina Jolie, Celine Dion, The WhiteHouse, Ella Henderson, Enrique Iglesias, Jacinda Arden, Serena Williams, Yoshua Bengio, Sarah Paulson, Demi Moore, Bruce Willis, Ashton Kutcher, Sandra Bullock, Katy Perry, Kash Patel, Prince Williams of Wales, Marco Rubio - SecState of Us, Vice President-JD Vance, Lionel Richie, Lionel

Messi, President Donald Trump, First Lady Melania Trump, Bridget Regan known as Kahlan Amnell, Jeff Bezos, Jay-Z, Sergey Lavrov, President Medvedev Dimitri, Pristine Edge, President Vladimir Putin, Reagan Foxx, Priscilla Chan, Mark Zuckerberg, Danny D, Johnny Sins, Bridgette B, Lisa Ann, Our Thanks goes to Lisa Ann Speech in Oxford British Union, Kim Jong, President Zelensky, Mia Khalifa, Violet Myers, Kristen Stewart, Taylor Lautner, Robert Pattinson, King Charles, Professor Manuel Morales, Xander Corvus, Mike Blue, Keeran Lee, Alexis Fawx, Nicolas Cage, Karl Urban, Meryl Streep, Jared Leto, Idris Elba, Sigourney Weaver, Lamorne Moris, Adriana Chechik, Neil Patrick, Christina Aguilera, Christina Applegate, Tom Holand, Nathan Fillion, Scarlett Johansson, Eva Mendes, Lucy Liu, Jessica Alba, Halle Berry, Matt Damon, Johnson Dwayne, Mila Kunis, Emma Stone, Salma Hayek, Mila Jovovich, Tom Hanks, Jason Momoa, Amber Head, Governor of Michigan, Gretchen Whitmer, Jesse Eisenberg, Rihanna, Mario - The Kriptonite, Johnny Deep, Lady Catherine Kate of Wales, Nicole Kidman, Eva Longoria, Penelope Cruz, Olivia Wilde, President Barack Obama, President Bola Ahmed Adekunle Tinubu of Nigeria, Chancellor Friedrick Merz, Jamie Foxx, Jennifer Lawrence, Ben Affleck, 50 Cent, Sean Combs, Snoop Dogg, Eminem, Angela Merkel, Olaf Scholz, Annalena Baerbock, Sabalenka, Elena Rybakina, Iga Swiatek, Coco Gauff, Wiz khalifa, Amber Rose, Charlie Puth, Dollar Sign, T-Pain, Kylie Jenner, Blac Chyna, Lil Wayne, Kid Ink, Nicki Minaj, Avril Lavigne, Drake, Tyga, Big Sean, Rick Ross, Asap Rocky, Chris Brown, Dj Khaled, Meek Mill, French Montana, MGK, Jimmy Fallon, Emmanuel Macron, Mary Blige, Giorgia Meloni, Francois Hollande, Edouard Philippe, Jean-Luc Melenchon, Gabriel Attal, President Xi Jinping, Marine Le Pen, Olena Zelenska, Akon, Lulu Chu, Kehlani, Ella Mai, Mark Carney, Ivanka Trump, Snow Tha Product, Barron Trump, Will Smith, Prime Minister Robert Fico, JoJo, Brad Pitt, India Summer, James Deen, Professor Bilodeau Martin, Professor Andrew Grainville, Professor Matilde Lalin, Professor Robert Owen, Professor Augustyniak Maciek, Professor Maire Florian, Professor Guillaume Lajoie, Professor Alexander Fribergh, Professor Polterovich Iosif, Professor Igor Shelukhin, Professor Wolf Guy, Professor Claudia Gagne, Professor Dimitrios Koukoulopoulos, Alexander Lukashenko, Sviatlana Tsikhanouskaya, Emilia Clarke, Keyshia Cole, Keri Hilson, Jason Statham, Lily Collins, Sam Claflin, Jordin Sparks, Ciara, Algernod Washington, Beyonce, Ja Rule, Ja Rule, Nelly, Kelly Rowland, Jennifer Aniston, President Cyril Ramaphosa, Jason Aldean, Henry Cavill, Tom Cruise, Luke Combs, Megan Fox, Meghan Duchess of Wales, Prince Harry of Sussex, Teeyah, Kaysha, Rachel Potter, Keegan Michael, Rosie Marcel, etc.

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References

[Car10] Pierre Cardaliaguet. Notes on mean field games. Technical report, Technical report Technical report, 2010.

[Car20] Rene Carmona. Applications of mean field games in financial engineering and economic theory. *arXiv preprint arXiv:2012.05237*, 2020.

[CP21] Pierre Cardaliaguet and Alessio Porretta. An introduction to mean field game theory. In *Mean Field Games: Cetraro, Italy 2019*, pages 1–158. Springer, 2021.

[HJN19] Xuancheng Huang, Sebastian Jaimungal, and Mojtaba Nourian. Mean-field game strategies for optimal execution. *Applied Mathematical Finance*, 26(2):153–185, 2019.

[LL07] Jean-Michel Lasry and Pierre-Louis Lions. Mean field games. *Japanese journal of mathematics*, 2(1):229–260, 2007.

[LLLL16] Aimé Lachapelle, Jean-Michel Lasry, Charles-Albert Lehalle, and Pierre-Louis Lions. Efficiency of the price formation process in presence of high frequency participants: a mean field game analysis. *Mathematics and Financial Economics*, 10(3):223–262, 2016.

[NC13] Mojtaba Nourian and Peter E Caines. -nash mean field game theory for nonlinear stochastic dynamical systems with major and minor agents. *SIAM Journal on Control and Optimization*, 51(4):3302–3331, 2013.